UF-MATIC

LOGIC CONTROLLER

Size : 144(Horizontal) X 144(Vertical) X 125(Depth) mm

Cutout size : 138 X 138 mm

FILTRA CONSULTANTS AND ENGINEERS LTD.
Gala No. 2 & 3, Ground Floor, Neminath Industrial Estate No. 2, Navghar, Vasai (East), Dist.: Palghar - 401 219
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TECHNICAL SPECIFICATIONS:

1) Size	144(H) X 144(V) X 125(D) mm
2) Cutout size	138(H) X 138(V) mm
3) Display	16 X 2 Alphanumeric backlit LCD
4) Settings	Through front panel keys(3 numbers)
5) Timings	Settable (Password protected)
6) Inputs	6 (Switch inputs) 1 (Flow input (with Totalizer)
7) Outputs	12 (C NO) relay
8) Supply	230 VAC $\pm$ 10%

GUARANTEE CERTIFICATE

We certify that the instrument mentioned above has been tested by us and is guaranteed for a period of 12 months from the date of dispatch. We undertake to make good by replacement or repair defects arising due to faulty design, material or workmanship within the above mentioned period. Provided that the part in respect to which the complaint is made, is sent at the purchaser's expense.

The warranty is valid subject to:

- The meter or part there of not being subject to alteration, accidents or misuse.
- The installation having been done as per our guidelines in the manual.

Tested by:

Client:

Date of dispatch:

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Automation Philosophy:

The controller is designed to operate a UF system automatically. All the steps happen sequentially after the set timings. One can configure two counters after any Step which would initiate the Step sequence defined. All step timings are settable at site(Password 345)

For example, one has programmed 3 steps viz FORWARD FLUSH, BACKWASH & CROSS FLOW & default step is SERVICE. Now we can program the controller in such a way that each service step is followed by a Forward flush. After x number(settable) of such service-forward flush cycles*, the unit will go to backwash step. Further after y number of backwash cycles unit goes to CROSS FLOW step. One can switch ON/OFF any output in any step(in password 567)

*Note: Incase the diff. Pressure input gets energized before the set number of Service-forward flush cycles; the unit will immediately go into backwash.

The panel basically can take 6 inputs namely raw water tank level, treated water tank level & four auxiliary inputs(which can be configured as DPS- differential pressure switch, TWLOL-treated water tank low low level, RL2,DOSLVL) and controls 12 outputs viz.Raw water pump,Backwash pump and 10 solenoid valves .

Operating logic :

Upon switching ON power supply of the controller, if level of permeate tank & raw water tank is OK then unit starts with Default step and continues with the defined steps.

Operation of the panel :

Starting sequence :

Once it is started with a particular step, controller will switch ON all the valve O/Ps & after delay time it will switch on the pump.

Stopping sequence :

Under following conditions processor will stop it's operation

1. If plant is stopped manually.
2. If treated water tank is full (Open).
3. If raw water tank is empty (Short).

Trip sequence : Under following conditions processor will trip, at that time press start to acknowledge & resume operation.

1. Pressure is high.
2. Dosing tank level low.

Instructions for Setting the Panel: Use the following keys for setting the panel as Per given instructions.

▶ **START:** This key is used to scroll manually and move the curser forward.
▲ **STOP:** This key is used increase the value & stop/skip/hold/reset the step.
↵ **MENU:** This key is used to go to next step (**Enter**).

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TERMINAL CONNECTIONS:

NO.	TERMINAL	DESCRIPTION	CONNECTION
1	MAINS	INPUT SUPPLY	P-Live
2			N-Neutral
3			E-Earth
4	POLE 1	POLE 1	OUTPUT COMMON 1
5	O/P 1	OUTPUT 1	NO of O/P 1
6	O/P 2	OUTPUT 2	NO of O/P 2
7	O/P 3	OUTPUT 3	NO of O/P 3
8	O/P 4	OUTPUT 4	NO of O/P 4
9	O/P 5	OUTPUT 5	NO of O/P 5
10	O/P 6	OUTPUT 6	NO of O/P 6
11	O/P 7	OUTPUT 7	NO of O/P 7
12	O/P 8	OUTPUT 8	NO of O/P 8
13	POLE 2	POLE 2	OUTPUT COMMON 2
14	O/P 9	OUTPUT 9	NO of O/P 9
15	O/P 10	OUTPUT 10	NO of O/P 10
16	O/P 11	OUTPUT 11	NO of O/P 11(BWP)
17	O/P 12	OUTPUT 12	NO of O/P 12(RWP)
18	RWT FLT	Raw water tank Floaty	NC- Normally closed @ low level
19	TWT FLT	Treated water tank Floaty	NC- Normally closed @ low level
20	AUX I/P 1	PRESSURE I/P	NO- Normally Open } Closes @ fault
21	AUX I/P 2	Dosing tank level	NO- Normally Open
22	AUX I/P 3	Treated water tank low level	NO- Normally Open
23	AUX I/P 4	REMOTE FAULT	NO- Normally Open
24	I/P COM	INPUT COMMON	COMMON FOR INPUTS
25	V+	Supply to Flow sensor	R - Red
26	FLOW I/P	Input from Flow sensor	G - Green
27	RS 485 O/P	Serial output	+
28			-

TO VIEW THE FACTORY SETTINGS(SEC 1.1)	
KEY PRESSED	**DISPLAY**
MENU	STRT CYC ?
MENU	STRT CYC ? NO
What is this? If you wants to initiate the cycle, make it YES.	
MENU	VIEW?
Display scrolls through all the settings set by factory.	
MENU	RW LEVEL SW : ON
	TW LEVEL SW: ON
	AUX INPUT 1 :PRSIP
	AUX INPUT 2 :DOSLL
	AUX INPUT 3 :TWLL
	AUX INPUT 4 : RMSTP
	NO.OF STEPS:03

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	OP.MODE?
MENU	OP.MODE? AUTO
MENU MENU	SCROLL ? SCROLL ? OFF
Use STOP key to make it ON.	
What is this ? When Scroll is ON display will keep scrolling through PLANT STATUS,Flow rate & Total and REMAINING CYCLES.	
TO CONFIGURE INPUTS(SEC 1.2)	
Controller has 6 switch inputs namely I/P 1:RW tank level I/P 2 : TW Tank level I/P 3: PRESS IP(high pressure switch) I/P 4: DOSLL(Dosing tank low level) I/P 5: TWLL(Treated water low level) I/P 6 : Remote fault	
START & STOP SIMUTANEOUSLY	PASSWORD:000
ENTER PASSWORD 678 WITH START & STOP KEY	
MENU	FLOW SENSORS:
MENU	NO OF SENSOR:1
MENU	SENSR1 FACTOR Previously set value
MENU	END?
MENU MENU	RW LEVEL SW RW LEVEL SW : ON
Use STOP key to make it OFF	(Only if Level SW needs to be bypassed)
MENU	TW LEVEL SW
MENU	TW LEVEL SW: ON
Use STOP key to make it OFF	(Only if no level control required)
MENU	AUX INPUT1:
MENU	AUX INPUT1: PRESS IP
Use STOP key to change it.	
MENU	AUX INPUT2:
MENU	AUX INPUT2: DOSLL
Use STOP key tochange it.	
MENU	AUX INPUT3:
MENU	AUX INPUT3: TWLL
Use STOP key to change it.	
MENU	AUX INPUT4:
MENU	AUX INPUT4: REMOTE FAULT
Use STOP key tochange it.	
MENU	EXIT?
TO SET STEP TIMINGS (SEC 1.3)	
How to set step timings ?	
START & STOP simultaneously	
PASSWORD	000
Put a password 345 with START & STOP keys	
MENU	SET STEP TIME ?
MENU	STEP1 TIME: 0000 Sec
Use START & STOP keys to set required time.	

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MENU	STEP2
⋮	
MENU	END
MENU	SET SERV TIME?
MENU	SET SERV TIME? TIME : 00:30
Use START & STOP keys to set required time.	
MENU	RESET1 COUNT
MENU	RESET1 COUNT 01
Use START & STOP keys to set required count.	
MENU	RESET2 COUNT
MENU	RESET2 COUNT 01
Use START & STOP keys to set required count.	
MENU	QUIT
MENU	QUIT?
TO CONFIGURE STEPS & OUTPUTS (SEC 1.4)	
Key Pressed	**Display**
START & STOP simultaneously	PASSWORD:0000
Enter the password 567 using START & STOP keys.	
MENU	NO.OF PUMPS?
MENU	NO.OF PUMPS? 2
Use STOP key to make it 1if only one pump is used(O/P 12)	
MENU	PROGRAME STEPS
MENU	NO.OF STEPS:00
Use ACK. & SCROLL key to set required number of steps.	
MENU	DEF STEP
MENU	SET NAME
MENU	*SERVICE*
Use SCROLL key to select required name.	
MENU	SET OUTPUTS
MENU	SOL.OUTPUT
MENU	SOL.OUTPUT 0 1 0 0 0 0 0 0
Use STOP key to make required valve O/P ON/OFF.	
MENU	PUMPOUTPUTS 0 1 0 0
Use STOP key to make required PUMP O/P ON/OFF.	

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MENU	QUIT?
MENU	STEP1
⋮	
MENU	END
Follow above guideline for number of steps set.	
MENU	END
MENU	OUTPUT 10 ?
MENU	OUTPUT 10 ? ALARM
Use STOP key to make it NORML.	
What is this ? This O/P is configurable.One can use it as valve output or as an alarm output(which will be ON when fault occurs).	
MENU	SET TIMERS
MENU	OP'S OFF DLY
MENU	OP'S OFF DLY 005
Use ACK & SCROLL key to set required time.	
What is this ? This is the delay time between two steps. All the outputs will be OFF for this much time.	
MENU	OP ON-PMP ON DLY
MENU	OP ON-PMP ON DLY 000 Sec
Use ACK & SCROLL key to set required time.	
What is this ? This is the delay by which pump output will start after valve output becomes ON	
MENU	PMP OF-OP OF DLY
MENU	PMP OF-OP OF DLY 000 Sec
Use ACK & SCROLL key to set required time.	
What is this ? This is the delay by which pump output will stop before Valve output becomes OFF	
MENU	EXIT?
MENU	START SENSOR*
MENU	PUMP TIME
Use STOP key to make it FLOW SENS or PULSE I/P or RL2 I/P	

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MENU	SET RSET STEP
MENU	NO OF RESET'S
MENU	NO OF RESET 0
Use SCROLL key to make it 1 or 2	
What is this? The logic controller has a facility to perform a step(which is already defined) once in X number of cycles. Similarly it can perform next step once in Y number of cycles.(e.g.Lets assume that one has defined 3 steps viz.SERVICE(DEF STEP),FORWARD FLUSH,BACKWASH and CROSS FLOW. Now he doesn't want to do BACKWASH & CROSSFLOW in every cycle. But once in X number of SERVICE & FORWARD FLUSH cycles he will do a BACKWASH and after Y number of BACKWASH cycles he will do a CROSSFLOW. In this case he will set NO OF RESET 2)	
MENU	RET 1 AFTR STEP
MENU	RET 1 AFTR STEP STEP 2
Use SCROLL key to set required step number	
What is this? After set number of step(STEP 2 in above case) controller will preform the step(BACKWASH) which is supposed to perform after X number of cycles.	
MENU	RET 2 AFTR STEP
MENU	RET 2 AFTR STEP STEP 2
Use SCROLL key to set required step number	
What is this? After set number of step(STEP 2 in above case) controller will preform the step(BACKWASH) which is supposed to perform after Y number of cycles.	
MENU	QUIT?
MENU	EXIT?

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